

# NGDA Dataset Report

**Official NGDA Title:** Environmental Sensitivity Index (ESI) Data Viewer and REST Services for Atlases

**Metadata Record Title:** Environmental Sensitivity Index (ESI) Data Viewer And REST Services For Atlases

**A-16 NGDA Theme:** Biota

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## Metadata:

**Registration Status:** Complete  
**Registered on** 12/24/2014

**GeoPlatform Link\*:** <http://www.geoplatform.gov/node/243/28568202-f290-46a5-b2dc-5bdf5f2c471>

**Data.gov Metadata Link\*:** <http://catalog.data.gov/harvest/object/1817f0b8-a7cb-4d9e-a809-a276c8a8e3dd/html>

\*If the metadata has been updated and reharvested after publication of this report, the link may no longer be valid. The dataset may be searched for manually in Data.gov or GeoPlatform.gov.

# NGDA Lifecycle Maturity Assessment (LMA) Report

## Time Frame:

Baseline assessment responses include dataset activities from 1992 to 2015.

## LMA Submission:

**Status:** Complete

**Date:** 9/28/2015

**Extension Requested:** No

## LMA Reviewer(s):

**Supervisor:** Mark Miller: mark.w.miller@noaa.gov

**Theme Lead:** Did not review

**Executive Champion:** Did not review

**SAOGI\*:** Did not review

**Other:** Did not review

## LMA Verifier:

**Name:** Mark Miller

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## Attachments:

To get access to any attachments referenced in the report, email the LMA Help Desk at NGDA\_LMA\_help@fgdc.gov. Please use the subject "Dataset Report Attachment(s)" and indicate the associated official NGDA title.

\*Senior Agency Official for Geospatial Information (SAOGI)

## Lifecycle Maturity Assessment (LMA) Summary

### Overall Maturity:

**Managed; Predictable**

General Questions: 58%

**Managed; Predictable**

Stage 1 - Define/Plan: 95%

**Optimized; Established**

Stage 2 - Inventory/Evaluate: 50%

**Managed; Predictable**

Stage 3 - Obtain: 72%

**Mature; Consistent**

Stage 4 - Access: 25%

**Planned; Initial Development**

Stage 5 - Maintain: 41%

**Transition; Transformation**

Stage 6 - Use/Evaluate: 33%

**Transition; Transformation**

Stage 7 - Archive: 33%

**Transition; Transformation**

### NGDA Dataset Maturity Definitions:

How To Calculate Maturity: [https://www.geoplatform.gov/sites/default/files/How\\_to\\_Calculate\\_Maturity.pdf](https://www.geoplatform.gov/sites/default/files/How_to_Calculate_Maturity.pdf)

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Rank = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Rank = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as authoritative by the primary owner. Dataset is used widely by secondary users actively engaged in sustaining the dataset. Future needs are identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Rank = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used as an authoritative resource by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Rank = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Rank = 1	Dataset limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, partnerships are forming to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Rank = no activity	Dataset meets project or local business needs of the primary owner, secondary or additional uses or users were not considered, not recognized as an authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

## General Questions for All Stages

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

**Answer:** Funding is from local offices, budgeting effort minimal, staffing minimal.

**Justification Comment:**

**Attachment(s):** 0

Funding for ESI development is requested annually in the budget for the Office of Response and Restoration. The funding varies from year to year, from \$0 - \$500K. A single ESI update ranges in cost from \$350-\$700, so base funds typically cover about one update spanning 2 years. External funds, from the US Coast Guard and interested states, has supplemented development in the past, enabling us to average one-two regions per year. Currently we have no interagency agreements in place for upcoming ESI development.

When possible, we take advantage of other funding opportunities, such as the recent Disaster Relief fund appropriations for Hurricane Sandy. This was a large boost to the development of ESIs, enabling us to update the majority of the Atlantic coast.

Maintenance of data, once released, is totally funded and staffed internal to the Office of Response and Restoration.

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2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

**Answer:** Process identified, early implementation.

**Justification Comment:**

**Attachment(s):** 0

The ESIs, while compiled by contractors, are very much a product of public/community participation and collaboration. The biological and human use regional experts are identified early in the process, and are the source of the data published in the final digital data set. Federal/state/local governmental and non-governmental organizations (academia, non-profit, private data holders) are all solicited for the best data available which is then compiled into the ESI structure. These same experts, and potentially others, actively participate in the review of the data, as it will be published. They are responsible for the ultimate approval of the data quality and accuracy.

When working with sensitive data, we have a variety of options for the data provider to protect details, while conveying the essence of the data. We are in the process of updating the ESI guidelines to better capture and standardize these methods.

Once the data is published, it is available for public consumption in its entirety.

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3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure a continuity of the dataset for all stages of the lifecycle, especially during staffing transitions?

**Answer:** Processes and tools to ensure dataset continuity are in place and implemented for all lifecycle stages.

**Justification Comment:**

**Attachment(s):** 2

The third version of the ESI Guidelines ([http://response.restoration.noaa.gov/sites/default/files/ESI\\_Guidelines.pdf](http://response.restoration.noaa.gov/sites/default/files/ESI_Guidelines.pdf) (cannot attach, due to size.)) was published in 2003. This document provides guidance for data collection methods, content standards, and database structure. An intricate part of the database documentation is the "data dictionary", which defines each of the ESI data tables and provides acceptable values for each of the fields. This part of the guidelines was updated in 2015, and includes appendices with additional supportive information. (also attached).

The guidelines have been used by states and internationally to develop ESI data that are compatible with the NOAA ESI data standard. Recently, it was used internally to assure the 4 different contracting agencies developing ESI products for the Atlantic would produce a consistent product.

Methodologies have been refined and some data tables have been enhanced since the 2003 release of the Guidelines. We are trying to identify funding to update the guidelines in 2016.

## STAGE 1 - Define/Plan

4) Are user and business requirements defined and formalized?

**Answer:** A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

**Justification Comment:**

**Attachment(s):** 1

There are several procedures in place to assess our user needs and to assure we are meeting the needs of our constituents.

1) User workshops - held approximately every 5 years, we began these workshops in the early 1990's, and they played an important role in the original development of the digital product. Workshops include representatives from coastal state agencies, Coast Guard, NOAA, NGOs, and more, including international representation. Review of current products and methods, and assessment of future paths are evaluated. The last workshop was held in November of 2012. A link to proceedings and documentation of user input can be found here: <http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/response-tools/esi-workshop-next-generation-esi.html>

2) We have utilized surveys to solicit input and assess the needs of our users. The most recent surveys were completed in 2012 and 2014, and played a vital role in the revitalization of the ESI data content and structure. Results were evaluated by one of our ESI contractors, and a summary document was produced. This document is attached. There is also a summary on our ESI news page at: <http://response.restoration.noaa.gov/maps-and-spatial-data/news-esi-team.html>

3) Our diversely located Scientific Support Coordinators provide regional feedback from their local constituents. They attend regional and national oil spill planning meetings, where they solicit feedback that is fed back to the ESI development group.

4) We have an ESI Blog, that is used to update our ESI users and solicit feedback. User's may use this forum, or send email to our esi\_manager account to address concerns and suggestions regarding the ESI products and status. Information about the blog may be found at: <http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/announcing-new-esi-blog.html>

5) How are partners/stakeholders involved in the requirements collection process?

**Answer:** A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

**Justification Comment:**

**Attachment(s):** 0

Partners/stakeholders - including states, NGOs, industry and other federal agencies - are involved in defining the data content and are instrumental in populating the ESI data. Roles of data providers are well defined and the process of gathering and compiling the data they provide is documented in the ESI guidelines. Stakeholder review is an integral part of the ESI data publication.

6) Is there a quality assurance process for the dataset?

**Answer:** Process established, significant portions of the documentation is complete.

**Justification Comment:**

**Attachment(s):** 0

Data quality is assured...

- 1) by identifying the most appropriate sources for each data set
- 2) working with multiple resource experts to assure data from diverse sources is compatible and complimentary
- 3) resource experts review their data providings and those of their contemporaries and must provide the final stamp of approval
- 4) data goes through additional QA/QC by the collecting contractors and internally at NOAA to assure it is compliant with the data structure as defined

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**7)** Is there a process to evaluate the sensitivity, privacy, and confidentiality of this dataset?

**Answer:** Sensitivity, privacy, and confidentiality evaluations fully implemented, reviewed and updated on a recurring basis.

**Justification Comment:**

**Attachment(s):** 1

Data providers are informed at the start that all ESI data will be available for public download. Because this may conflict with the "need to know" where sensitive resources may need protection in the even to of an oil spill, data experts are encouraged to work with our contractors to identify an appropriate way to include their data that will not compromise their need for protection.

We have established a variety of ways to provide data at the level needed for appropriate response measures to be implemented, but obscure the sensitivity. This may be buffering/masking geographically, or generalizing specific species, etc. These methods have been outlined in the guidelines, and will be expanded upon in the next version of the ESI guidelines.

We have crafted a generic letter to data providers (attached) to make sure the data contributors are aware of our need and our concern about offering their data in a fashion compatible with their comfort level.

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**8)** Are defined data standards used in collecting, processing, and/or rendering the data?

**Answer:** Standards fully implemented documented and published as appropriate.

**Justification Comment:**

**Attachment(s):** 0

As previously discussed, the ESI Guidelines

([http://response.restoration.noaa.gov/sites/default/files/ESI\\_Guidelines.pdf](http://response.restoration.noaa.gov/sites/default/files/ESI_Guidelines.pdf)) are used for standardizing the data collection, compilation and rendering of the ESI data.

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## STAGE 2 - Inventory/Evaluate

**9)** Is there a process for determining if data necessary to meet requirements already exist from other sources (either within or outside the agency) before collecting or acquiring new data?

**Answer:** Process is being implemented to identify datasets promoting reuse and reduce duplication.

**Justification Comment:**

**Attachment(s):** 0

The only "original" data published in the ESIs are the classified shoreline data. This is a classification scheme, unique to ESIs for the purpose of oil spill planning and response. All other data are farmed from other data producers, so there is no duplication, only re-packaging. The ESIs are unique as "one stop shopping" for coastal environmental data, but they do not promote themselves as data originators. We work internally with NOAA offices and data sets (shoreline of choice is NGS CUSP, we are using storm surge data from NHC, we work with NMFS, NMS, and regional offices for some of our biology data, OCM for many cadastral and human use data sets), and we coordinate extensively with other federal and state agencies. Duplication potential is minimal and is avoided.

## STAGE 3 - Obtain

**10)** Is there a process for obtaining data in relation to this dataset?

**Answer:** Process is being implemented.

**Justification Comment:**

**Attachment(s):** 0

This has been addressed in several earlier questions. The ESIs do not generate new data (other than the classified shoreline). Our outreach to data holders for integration of their data is documented in the ESI guidelines and is well established.

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**11)** Is the metadata in a FGDC endorsed geospatial metadata standard?

**Answer:** Metadata is available in a format endorsed by the FGDC, it fully describes the dataset and provides all the information required to make the dataset discoverable, accessible, and usable.

**Justification Comment:**

**Attachment(s):** 0

All of our metadata is complete and FGDC compliant. It is published in Mermaid and is also available for download with each of our regional ESI data sets.

An example of our metadata may be viewed at:

[http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/LongIs\\_NY\\_2009\\_Meta.pdf](http://response.restoration.noaa.gov/sites/default/files/esimaps/gisdata/LongIs_NY_2009_Meta.pdf)

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**12)** How complete is the geographic coverage as defined in the requirements for the dataset?

**Part 1 Answer:** Business requirement targets identified for completing geographic coverage. Cyclic updates for refreshing dataset in early phases.

**Part 2 Answer:** Dataset has presently attained the greatest geographic coverage as defined by the current requirements or roughly 100%.

**Justification Comment:**

**Attachment(s):** 1

The entire U.S. coast, as well as that of the U.S. territories, has been mapped using the ESI methodology at least once. Work in progress (due to be completed early 2016) will complete digital coverage of the contiguous U.S. coastal regions at a scale of 1:24K or higher.

The Alaska Coastline is currently available digitally. The majority was mapped at a scale of 1:64K.

Updates are performed as funding is available.

Maps of data currency are attached.

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## STAGE 4 - Access

**13)** Do you have a process for providing users access to the data in an open digital machine readable format?

**Answer:** Process is under development.

**Justification Comment:**

**Attachment(s):** 0

In addition to providing data in ArcMap formats, all digital ESI data are published as an OGC map service through OR&R's ERMA platform (Environmental Response Management Application - <http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-response-management-application-erma>)

ESI maps published in Portable Document Format are 508 compatible.

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## STAGE 5 - Maintain

**14)** Is there a maintenance process for updating and storing the dataset?



**Answer:** Dataset maintenance process is identified and documented.

**Justification Comment:**

**Attachment(s):** 0

Criteria for prioritizing the updating ESI data are established, however funding availability and consistency dictates the reality of the update process.

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**15)** Is there an error correction process as part of dataset maintenance?

**Answer:** Error correction process under development.

**Justification Comment:**

**Attachment(s):** 0

If errors are identified by end users, the ESI datasets may be updated to correct those errors. In general, however, once the ESI data are published, they are static, and do not get modified prior to the next update cycle.

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## STAGE 6 - Use/Evaluate

**16)** Is there a process to determine if the dataset meets user needs?

**Answer:** Process is being developed to determine if user needs are being addressed or met.

**Justification Comment:**

**Attachment(s):** 0

Question 4 addresses the multiple modalities used to access the needs of our user base. Assessment of user needs based on existing products drives the evolution of the ESI data in all regards: content, accuracy, data structure, data distribution formats, etc.

From question 4:

There are several procedures in place to assess our user needs and to assure we are meeting the needs of our constituents.

1) User workshops - held approximately every 5 years, we began these workshops in the early 1990's, and they played an important role in the original development of the digital product. Workshops include representatives from coastal state agencies, Coast Guard, NOAA, NGOs, and more, including international representation. Review of current products and methods, and assessment of future paths are evaluated. The last workshop was held in November of 2012. A link to proceedings and documentation of user input can be found here: <http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/response-tools/esi-workshop-next-generation-esi.html>

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4) We have an ESI Blog, that is used to update our ESI users and solicit feedback. User's may use this forum, or send email to our esi\_manager account to address concerns and suggestions regarding the ESI products and status. Information about the blog may be found at: <http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/announcing-new-esi-blog.html>

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**17)** Is there a process to provide users information on how to access and properly use the dataset?

**Answer:** Process is being developed for providing access and proper use.



**Justification Comment:****Attachment(s):** 0

There are a variety of informational pages on the OR&R website, including basic tutorials, that describe the data content and the usage. <http://response.restoration.noaa.gov/esi>

Several tools have been developed for ArcMap users and are available (with documentation) at the above link.

When new ESI data are developed, we will occasionally have funding to provide training to users in the update region. ESI training is also included in several OR&R response training courses, such as the Science of Oil Spill classes, offered several times a year throughout the country. <http://response.restoration.noaa.gov/training-and-education/training/workshops/science-oil-spills-classes.html>

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**18)** Are the business processes and management practices assessed to meet changing technology?

**Answer:** Assessment process is being developed to take advantage of changing technology.

**Justification Comment:****Attachment(s):** 0

Technology needs are assessed based on feedback from users, and through internal and contractor-wide discussions. There are no formal methodologies in place for technology assessment at this time.

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## STAGE 7 - Archive

**19)** Is there an archiving process for the dataset?

**Answer:** Archival and/or disposition processes are in development.

**Justification Comment:****Attachment(s):** 0

Historic ESI data remains accessible to users from the ESI download page. There are no formal archival plans or practices in place.

<https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=download%20esi%20data>